



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,889	07/14/2003	Ralph Cilevitz	GC-520	5874

7590 04/03/2006

Parker & DeStefano  
Suite 300  
300 Preston Avenue  
Charlottesville, VA 22902

EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
----------	--------------

1731

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

64

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/618,889	CILEVITZ, RALPH	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 4-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6, which ultimately depends from Claim 2, recites the same limitation as Claim 2, "wherein said saturant further comprises a viscosity increasing agent, having a viscosity in the range ... suppressing delivering of said anti-static agent to the interstices of said base paper."

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite "...wherein said saturant further comprises a viscosity increasing agent, having a viscosity in the range that..." It is not clear whether the words "having a viscosity in the range" refer to the viscosity increasing agent alone, the saturant alone, or to the saturant comprising the viscosity increasing agent.

The terms "suppresses" and "suppressing" in both claims are relative terms which render the claim indefinite. The terms are not defined by the claims, the

specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The definitions of "suppress" in Webster's New Riverside University Dictionary (copy of page included) are:

1. To put an end to forcibly.
2. To curtail or prohibit the activities of.
- 3a. To keep from being revealed, published or circulated.
- 3b. To keep from conscious awareness.
4. To hold back.
5. To reduce the incidence or severity of.

Increasing the viscosity of the saturant to suppress, or prohibit or reduce, the saturation of the base paper inherently suppresses, prohibits or reduces delivery of the saturant into the interstices of the fibers. The specification does not define what degree of saturation or penetration of the base paper is contemplated. The Specification only states on p 8, lines 7-12 that penetration and deposition of the saturant into the base paper is important to the properties of the finished product (i.e.-conductivity, pleatability, linting and particulate sloughing) and on page 10, lines 1 and 2 that sizing controls the amount of saturant that saturates the base paper and that completely saturating the paper without sizing is highly disadvantageous. Thus it appears that complete saturation is permitted so long as the paper is also sized. The disclosure further fails to provide a measure for ascertaining the meaning of "not suppressing" the delivery of the

Art Unit: 1731

anti-static agent to the interstices of the fibrous base paper. The description provided thus does not enable one skilled in the art to make and use the invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armington et al (4806410) in view of Sonnabend (3607989).

Armington et al discloses a method for making anti-static paper. Two methods are disclosed and are illustrated in Figures 1 and 2. The first process, application of a liquid anti-static material to the formed paper during the papermaking process (i.e.-on-machine sizing/impregnating), is illustrated in Figure 1. The second method, application of a liquid anti-static material to the previously formed paper (i.e.-off-machine sizing/impregnating), is illustrated in Figure 2. In both cases the liquid is squeezed into the web via conventional sizing apparatus, thus inherently being deposited into the interstices of the paper (col 3, lines 18-36; col 4, line 30 to col 5, line 3).

In the method of Figure 1, the paper has a preferred porosity of about 5 to about 15 sec/100 ml as recorded on a Gurley densitometer prior to application of the anti-static liquid (col 5, lines 11-16). In the off-machine sizing method, the porosity can be

Art Unit: 1731

the same as used in the on-machine method or at least less than 25 sec/100 ml (col 9, lines 35-48). The disclosed range overlaps the claimed porosity range.

The anti-static agent is a water-soluble electroconductive quaternary ammonium polymer (col 5, lines 35-38). Table 9, cols 13 and 14, shows compositions applied to the paper, comprising anti-static/conductive polymer and modified starch, having 11-20 wt% solids. The ratio of conductive polymer to starch ranges from 1:1 (50% polymer and 50% starch) to 9:1 (90% polymer and 10% starch), which significantly overlaps the claimed range. Addition of the starch increases the viscosity (see entries in Table 9 for no modifier (32 cPs) and with starch added (58-162 cPs). Armington also discloses that it is well known to size papers to improve surface characteristics as well as resistance to grease, oil and water (col 13, lines 48-51). Typical internal sizing agents are alkyl ketene dimers and alkyl succinic anhydrides, which are applied in an amount of about 1-3 lb/ton) (see Biermann, *Pulping and Papermaking*, Academic Press, Inc., San Diego 1993, p 198). The typical range lies within the claimed range.

In the Examples, Armington et al does not use paper containing fillers. Since the ash content is a reflection of inorganic filler content, it is thus reasonable to expect the ash content of Armington et al's paper to be below the claimed 15%.

Table 2, cols 7 and 8 discloses a moisture content of the paper of around 5%, which lies in the middle of the claimed range.

Figure 3 shows the paper formed into a void-filler product having an irregular concave curvilinear surface (col 16, lines 52-60). The disclosed shape is non-uniform and obviously cannot be nesting.

Armington et al does not disclose that the viscosity increasing agent (starch) results in a viscosity in a range that suppresses saturation of the paper while not suppressing delivery of the anti-static agent to the interstices of the paper.

Sonnabend discloses a process for making electrographic paper comprising coating a preformed paper with an electroconductive resin. Sonnabend also discloses adding a thickener (viscosity increasing agent) to minimize surface penetration (col 2, lines 44-72). Sonnabend does not disclose that surface penetration is prevented, but that it is minimized, thus some penetration of the resin in to the interstices of the paper is contemplated.

The art of Armington et al, Sonnabend and the instant invention are analogous as pertaining to making paper containing electroconductive materials. It would have been obvious to one of ordinary skill in the art to use a viscosity increasing agent and suppress saturation of the paper by the electroconductive resin in the method of Armington et al in view of Sonnabend to concentrate the electroconductive material near the surface of the paper and maximize its effectiveness.

### ***Response to Arguments***

The rejection of Claims under 35 U.S.C. 102(b) of Claims 2-4, 6 and 8-15 has been withdrawn in view of the amendments to Claim 2, making Applicants arguments with respect to the rejections moot.

Applicant's arguments filed 2/10/2006 with respect to the rejections of Claims 3 and 6 under 35 U.S.C. 112 (pp 6 and 7) have been fully considered but they are not

Art Unit: 1731

persuasive. Applicant's recitation of synonyms for the word "suppress" is noted. The synonyms appear to correspond with the definition (d) of the word as indicated above in the rejection of Claims 2 and 6 under 35 U.S.C 112.

As discussed above, increasing the viscosity of the saturant to suppress, or prohibit or reduce, the saturation of the base paper inherently suppresses, prohibits or reduces penetration of the saturant into the interstices of the fibers. Regarding the amount of penetration of saturant into the paper, the specification only states that penetration and deposition of the saturant into the base paper is important to the properties of the finished product (p 8, lines 7-12) and that sizing controls the amount of saturant that saturates the base paper, seeming to indicate that at least some of the saturant penetrates completely through the paper. Applicant's arguments that the penetration of the saturant into the interior of the paper is less than complete are outside of the description given in the Specification and one of ordinary skill in the art would not be able determine how to make and use the invention as described in the specification.

Regarding Applicant's arguments with respect to the rejection of Claims 2-15 over Armington et al under 35 U.S.C. 103 (p 8), the instant claims recite only that the "saturant further comprises a viscosity increasing agent, having a viscosity in the range that suppresses saturation of the base paper while not substantially suppressing delivering of said anti-static agent to the interstices of said fibrous base paper." Applicant has provided synonyms for "suppress" of "inhibit, subdue, repress and stifle" and specifically stated that "suppress" is not synonymous with "preclude, prevent, stop."



Art Unit: 1731

Although the viscosity modifier hinders the saturation process, it does not prevent it, thus complete saturation of the paper is possible. Also, since the anti-static additive is intended to be deposited into the interstices of the base paper (Claim 1), in at least one embodiment of the invention the paper can be completely saturated with the saturant. Squeezing the saturant into the paper as disclosed by Armington et al thus anticipates or makes obvious the instant invention.

Regarding Applicant's argument regarding the recitation of a viscosity in the range of 20 to 200 cps at 100 °F as measured on a Brookfield viscometer, the Brookfield is a rotational viscometer that utilizes a variety of spindles having different geometries and diameters, depending on the characteristics of the fluid to be measured (i.e.-Newtonian, non-Newtonian, gel, etc.). Measurements are performed by immersing a specific spindle in the fluid to be tested, imparting a specified rotational speed to the spindle, measuring the torque required to maintain that rotational speed, and converting the measurement to a viscosity. The tests are typically performed at several different rotational speeds to apply different shear rates to the fluids. For non-Newtonian fluids, which encompasses the vast majority of liquids and suspensions, the measured "apparent viscosity" will change as the shear rate is changed, either by varying the rotational speed or the size of the spindle. The specification of the spindle type, size as well as rotational speed(s) used are thus important parameters needed to adequately characterize the viscosity behavior of the fluid (see any Brookfield viscometer operating manual or the tutorial on "What is Viscosity," published on the Brookfield Engineering website, [www.brookfieldengineering.com/education/what-is-viscosity.asp](http://www.brookfieldengineering.com/education/what-is-viscosity.asp)).

It is also not clear to what material the viscosity range recited on p 10, lines 2-3 is intended to be applied since it appears in a description of both sizing and saturant.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DRC

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700